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JAPANESE [JP,4072342,B]

CLAIMS DETAILED DESCRIPTION
DESCRIPTION OF DRAWINGS
DRAWINGS

[Translation done.]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

Technical field

This invention relates to the side-by-side installation elevator device constituted so that you might make it go up and down two or more riding cages in one hoistway space.

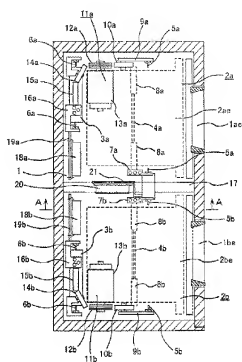
Background art

The side-by-side installation elevator device constituted so that you might make it go up and down two or more riding cages in one hoistway space is already proposed, for example by JP, 1-81782,A etc.

However, the above-mentioned conventional technology had a problem referred to as having to increase the cross-section area of hoistway space, when the consideration about installation of the control device which controls rise and fall of two or more riding cages was not made but it was going to install the control device of these plurality in

Drawing selection **Drawing 1**

第 1 図



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hoistway space.

The indication of an invention
The purpose of this invention is to provide the side-by-side installation elevator device which does not increase the cross-section area of hoistway space even if it installs in an inside all or some of control devices which controls rise and fall of a riding cage.

To achieve the above objects, this invention installed there some or all of the control device that controls operation of a riding cage using the installation space of the guide rail constructed at the side which a riding cage adjoins.

It becomes unnecessary to provide the space for exclusive use for installing a control device in hoistway space therefore, and it becomes unnecessary to increase the cross-section area of hoistway space by constituting as mentioned above for installation into the hoistway space of a control device.

The best gestalt for inventing
Below, it is based on Drawings 1 - 3, and the 1 embodiment by this invention is described.

The side-by-side installation elevator device by this embodiment is the composition of having made it going up and down the two riding cages 2a and 2b in one or the common hoistway 1. One or the common hoistway 1 is formed in one corner of a building construction with the wall of ferro-concrete of a building construction, and car stop doorway 1ae and 1be which open this hoistway 1 and each floor for free passage adjoin, and are formed. In such a hoistway 1, rise-and-fall guidance is carried out so that it may not interfere in the two riding cages 2a and 2b mutually, and basket doorway 2ae and 2be are made to counter said car stop doorway 1ae and 1be, and are located. Said car stop doorway 1ae and 1be are arranged in an opposite hand, and are made to carry out rise-and-fall guidance so that these riding cages 2a, 2b, and a pair may be made, and the balance weights 3a and 3b may not interfere with said riding cage 2a and 2b. These

aforementioned riding cage 2a, and 2b and the balance weights 3a and 3b are hung with the ropes 4a and 4b of the lot, respectively.

On the other hand, said riding cage 2a, and 2b and the balance weights 3a and 3b are guided so that rise and fall movement can be carried out with 2 sets of guide rails 5a and 5b for baskets and 2 sets of guide rails 6a and 6b for weights which were set up in said hoistway 1, respectively. The guide rail of each class accomplishes a pair, respectively. The guide rail for baskets which separates mutually among said guide rails 5a and 5b for baskets, and is installed, It is fixed via a bracket (not shown) and the guide rail for baskets which approaches mutually and is installed is fixed to the wall of the hoistway 1 which adjoins said car stop doorway 1ae and 1be by the adjoining riding cage 2a and the support means installed between 2bs. On the other hand, the guide rail for weights which separates mutually among the guide rails 6a and 6b for weights, and is installed, Like said guide rail for baskets, in the wall of the hoistway 1 which adjoins said car stop doorway 1ae and 1be for example, It is fixed via a bracket (not shown) and the guide rail for weights which approaches mutually and is installed is fixed to the wall of said car stop doorway 1ae, 1be, and the hoistway 1 that counters, for example. The opposed interval of the guide rails 6a and 6b for weights, Since it has an interval narrower than the opposed interval of the guide rails 5a and 5b for baskets, said guide rails 6a and 6b for weights are installed so that each of the balance weights 3a and 3b may be arranged at the wall side slippage of the hoistway 1 which adjoins said car stop doorway 1ae and 1be. One end of said ropes 4a and 4b is connected with the upper bed part of the guide rails 5a and 5b for baskets of the side which adjoins mutually via the brackets 7a and 7b, and the other end, It is taken out to the wall side of the hoistway 1 through the turn belt pulleys 8a and 8b of the couple which

was extended caudad and supported pivotally at the said riding cage 2a and under floor side of 2b. It is wrapped around the turn belt pulleys 10a and 10b which the other end of each ropes 4a and 4b was extended up from there, and were supported pivotally by the upper bed part of the guide rails 5a and 5b for baskets via the brackets 9a and 9b. The other end of said ropes 4a and 4b wrapped around the turn belt pulleys 10a and 10b is wrapped around the driving pulleys 12a and 12b of the loop wheel machines 11a and 11b which were extended under the hoistway 1 and installed in the pars basilaris ossis occipitalis of the hoistway 1. The other end of said ropes 4a and 4b wrapped around the driving pulleys 12a and 12b. It takes about again to the upper part of the hoistway 1, and in the upper part of the hoistway 1, it is wrapped around the turn belt pulleys 14a and 14b supported pivotally by the guide rails 6a and 6b for weights, and the 3 whenever hoistway 1 goes caudad and it takes about. The other end of said ropes 4a and 4b taken about caudad is wrapped around the turn belt pulleys 15a and 15b which hang the balance weights 3a and 3b, and is extended in the 3 whenever upper part. The other end of said ropes 4a and 4b extended up is fixed to the brackets 16a and 16b supported by the upper part of the opposite hand of the guide rails 6a and 6b for weights which accomplish a pair.

Said loop wheel machines 11a and 11b drove the driving pulleys 12a and 12b and these driving pulleys 12a and 12b, for example, are provided with the electric motors 13a and 13b of an induction motor etc., the retarder which brakes rotation of these electric motors 13a and 13b, etc.

In the above-mentioned composition, by rotating the driving pulleys 12a and 12b, and driving said ropes 4a and 4b wrapped around these driving pulleys 12a and 12b by driving the electric motors 13a and 13b of the loop wheel machines 11a and 11b, Said riding cage 2a, and 2b and the balance

weights 3a and 3b are guided at said guide rails 5a and 5b for baskets, and the guide rails 6a and 6b for weights, and go up and down to an opposite direction.

In the side-by-side installation elevator device of the above-mentioned composition, the intermediate beam 17 is horizontally installed in the mid-position of the adjacent elevator device ranging over the wall of the building construction which counters. This intermediate beam 17 sets an interval to the sliding direction of the hoistway 1, is provided in it, constitutes the support means which supports said guide rails 5a and 5b for baskets of the side which adjoins mutually, and it constitutes the member which divides each riding cage 2a and the rise-and-fall passage of 2b. [two or more] On the other hand, the side-by-side installation elevator device has the control device provided with the control machinery 18a and 18b for controlling rise and fall of each riding cage 2a and 2b, and the control equipment 20 for managing operation to which each riding cage 2a and 2b related.

In recent years, although installing this control device for example, in a hoistway is proposed, the actual condition is having to secure the space for installing a control device in the hoistway 1, and having to distribute and install a control device out of a hoistway.

However, in the embodiment of the invention, said the whole or some of control device was installed between the adjoining riding cage 2a and the rise-and-fall passage of 2b. As shown in a drawing, specifically between the riding cage 2a and the rise-and-fall passage of 2b, The guide rails 5a and 5b for baskets and the intermediate beam 17 which supports these are installed, and the guide rails 5a and 5b for these baskets and the intermediate beam 17 occupy a big area superficially in the hoistway 1. Then, the control equipment 20 is made to support among control devices, in this embodiment, so that it may lap with

the level surface of projection of said intermediate beam 17. As shown in Drawing 3, by supporting via the bracket 21 to said guide rail 5b for baskets which faces between said intermediate beams 17 which adjoin up and down, this control equipment 20 will lap with the level surface of projection of the intermediate beam 17, and will be arranged.

On the other hand, said control machinery 18a and 18b is the space of the riding cage 2a, 2b, and a hoistway wall, approaches mutually the space formed among said adjoining balance weights 3a and 3b, and is arranged, and said guide rails 6a and 6b for weights are made to support it via the brackets 19a and 19b.

Although Drawing 3 installs the control equipment 20 between the intermediate beams 17 which adjoin the upper and lower sides in one place of the hoistway 1, it may be made to install the control equipment 20 and the control machinery 18a and 18b between the contiguity intermediate beams 17 in two or more places.

Thus, the control equipment 20 which is some control devices is installed using the space which laps with the level surface of projection of the intermediate beam 17. And in the embodiment which approached mutually the space formed among the adjoining balance weights 3a and 3b, and has arranged the control machinery 18a and 18b. It seems that the cross-section area of the hoistway 1 is not made to increase to them since it becomes unnecessary to secure the space for exclusive use for installing said control device to the outside of the hoistway 1, and the inside of the hoistway 1. Wiring leading about for connection with a power supply (not shown) or connection with the control equipment 20 can be shortened by making the control machinery 18a and 18b approach mutually.

Although an above embodiment installs only the control equipment 20 in the space which laps with the level surface of projection of the intermediate beam 17, A control

device may all come out, and a certain control machinery 18a and 18b and control equipment 20 may be installed in the space which laps with the level surface of projection of the intermediate beam 17, or only the control machinery 18a and 18b may be installed in the space which laps with the level surface of projection of the intermediate beam 17.

Although control equipment may become unnecessary corresponding to enlargement of the control machinery for controlling rise and fall of each riding cage with large-scale-izing and improvement in the speed of an elevator device, respectively, Even if it is such an elevator device, the same effect is acquired by installing some or all of a control device so that it may lap with the level surface of projection of an intermediate beam.

Although it is the composition of having made the guide rail 5b for baskets which faces between the intermediate beams 17 which adjoin up and down supporting the control equipment 20 via the bracket 21, in the above-mentioned embodiment, The same effect is acquired even if it makes it make all the control devices which contain the control equipment 20, the control machinery 18a and 18b or the control machinery 18a and 18b, and the control equipment 20 in the up-and-down intermediate beam 17 via the bracket 22 support as shown in Drawing 4.

In addition, each above-mentioned embodiment installs some or all of a control device so that it may lap with the level surface of projection of the intermediate beam 17, but, The installed device in a hoistway currently installed in the hoistway 1 from the former for operation of an elevator device, It may be made to abolish increase of the cross-section area of the hoistway 1 by installing so that it may lap with the level surface of projection of the intermediate beam 17, and installing some or all of a control device in the space vacant by this.

Although it is the composition of the

hoistway 1 having divided the above-mentioned embodiment with the wall of ferro-concrete of a building construction, and having made the two riding cages 2a and 2b installing there side by side, further again, Also in the hoistway divided with the steel frame which consists of a stringer, a transom, a diagonal brace, etc., it is good also as a side-by-side installation elevator device which could apply the above-mentioned embodiment and installed three or more riding cages side by side. As explained above, according to this invention, the side-by-side installation elevator device which does not increase the cross-section area of hoistway space even if it installs in an inside all or some of control devices which controls rise and fall of a riding cage can be obtained.

[Brief Description of the Drawings]

Drawing 1 is a crossing top view showing the 1 embodiment of the side-by-side installation elevator device by this invention.

Drawing 2 is a vertical section side view showing the inside of the hoistway containing the crossing flat-surface part of Drawing 1.

Drawing 3 is a vertical section expansion side view which meets the A-A line of Drawing 1.

Drawing 4 is a side view showing modification of Drawing 3.

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